

CLAIMS

What is claimed is:

1. A notebook computer system with wireless networking capability, the notebook computer comprising:
 - a central processing unit (CPU);
 - a system main memory;
 - a host bridge device coupling the CPU and system main memory;
 - an input/output controller hub (ICH) coupled to the host bridge by way of a primary expansion bus;
 - a wireless communication module coupled to a secondary expansion bus, the wireless communication module configured to perform radio frequency wireless data communication to a network, and wherein the wireless communication module is further configured to scan radio channels for availability of wireless access;
 - a power supply having a power rail, the power rail coupled to the wireless communication module and providing power to the wireless communication module responsive to assertion of an enable signal of the power supply;
 - an external seek enable button mounted on an exterior surface of the notebook computer;
 - a seek logic having:
 - i) a power supply enable output signal coupled to the enable signal of the power supply;
 - ii) a seek command output signal coupled to the wireless communication module; and
 - iii) a seek request input signal coupled to the external seek enable button;

21 wherein the seek logic is configured such that when the external seek button is activated, the
22 seek logic activates the power supply by assertion of the power supply enable signal, and asserts the
23 seek command output signal to the wireless communication module;

24 wherein the wireless communication module is configured to scan radio channels for
25 availability of wireless access responsive to assertion of the seek command output signal of the seek
26 logic; and

27 wherein the wireless communication module is further configured indicate the availability
28 of a wireless access point.

1 2. The notebook computer as defined in claim 1 wherein the wireless communication module
2 further comprises:

3 a plurality of radio circuits configured to communicate data via radio frequency signals;

4 a microcontroller coupled to the plurality of radio circuits and the secondary expansion bus,
5 and wherein the microcontroller scans radio channels for availability of wireless access responsive
6 to assertion of the seek command signal of the seek logic; and

7 a display device coupled to the microcontroller, and wherein the microcontroller activates
8 the display device to indicate the availability of a wireless access point.

1 3. The notebook computer as defined in claim 1 wherein the display device further comprises
2 a light emitting diode (LED) coupled to a digital output signal of the microcontroller.

1 4. The notebook computer as defined in claim 3 wherein the display device further comprises
2 a plurality of LEDs arranged in such as way as to indicate one of the availability and non-
3 availability of wireless access.

1 5. The notebook computer as defined in claim 2 wherein the display device further comprises
2 a display means for displaying text messages indicative of the availability of wireless access.

1 6. The notebook computer as defined in claim 2 wherein the plurality of radio circuits further
2 comprises:

a base-band to intermediate frequency (BB-IF) converter coupled to said microcontroller;

an intermediate frequency to radio frequency (IF-RF) converter coupled to the BB-IF
converter;

a radio frequency power amplifier coupled to the IF-RF converter, wherein the radio
frequency power amplifier amplifies a radio signal; and

an antenna that couples to the radio frequency power amplifier.

1 7. The notebook computer as defined in claim 1 wherein the power supply further comprises:
2 an enable input signal, and wherein the power supply powers the power rail responsive to
3 assertion of the enable input signal, and turns off the power to the power rail responsive to de-
4 assertion of the enable input signal; and
5 and wherein the enable input signal couples to each of the seek logic and a keyboard
6 controller.

1 8. The notebook computer as defined in claim 1 wherein the external seek enable button
2 further comprises a momentary push button mounted on a top surface of a display device of the
3 notebook computer.

1 9. The notebook computer as defined in claim 1 wherein the external seek enable button
2 further comprises a button mounted on a front edge of the notebook computer system.

1 10. The notebook computer as defined in claim 1 wherein the seek logic is further adapted
2 refrain from asserting the seek command signal when the notebook computer is powered-on.

1 11. A method of scanning for wireless local area network (LAN) access points with a
2 computing device, the method comprising:
3 powering substantially only a wireless communication module;
4 commanding the wireless communication module to perform a wireless LAN access seek
5 function; and thereby
6 determining whether a wireless LAN access point is available; and
7 informing the computing device user of the outcome of the determining step.

1 12. The method as defined in claim 11 wherein informing the computing device user further
2 comprises lighting a light emitting diode.

1 13. The method as defined in claim 11 wherein informing the computing device user further
2 comprises scrolling a message across a liquid crystal display.

1 14. The method as defined in claim 11 wherein powering the wireless communication module
2 further comprises:

3 pushing a button on an external surface of the computing device; and

4 enabling substantially only a power supply within the portable computer system that
5 supplies the wireless communication module.

1 15. The method as defined in claim 11 wherein commanding the wireless communication
2 module to perform a wireless LAN access seek function further comprises:

asserting a seek command digital signal by a seek logic in the computing device;

receiving the asserted seek command digital signal by the wireless communication module;

and

executing firmware within a microcontroller responsive to assertion of the seek command
digital signal.

1 16. The method as defined in claim 11 wherein determining whether a wireless LAN access
2 point is available further comprises executing software in a microcontroller that performs a seek
3 function.

1 17. A computer system comprising:

2 a radio module configured to provide wireless access to a network, and wherein the radio
3 module is configured to scan for available wireless access points responsive to an assertion of a
4 digital input signal of the radio module;

5 a power supply having an enable input signal and a power output rail, and wherein the
6 power supply powers the output rail responsive to assertion of the enable input signal;

7 an electrical switch mounted on an external surface of the computer system;

8 a seek logic having a power supply control output signal, a seek output signal and a seek
9 request input signal, wherein the power supply control output signal couples to the enable input
10 signal of the power supply, the seek output signal couples to the digit input signal of the radio
11 module, and the seek request input signal couples to the electrical switch;

12 wherein the seek logic is configured to assert its power supply control signal to the power
13 supply and assert its seek output signal to the radio module responsive to actuation of the electrical
14 switch only when the computer system is powered-off; and

15 wherein the radio module is further configured to indicate the availability of a wireless
16 access point.

17 18. The computer system as defined in claim 17 wherein the radio module further comprises:

19 a media access controller coupled to a Universal Serial Bus (USB) of the computer system,
20 the media access controller having a digital input signal coupled to the seek output signal of the
21 seek logic, and wherein the media access controller is further adapted to scan for available wireless
22 access points responsive to assertion of the seek output signal;

23 a plurality of radio circuits adapted to convert wireless communication from the computer
24 system to radio frequency signals; and

25 a signaling unit coupled to the media access controller that indicates the availability of a
26 wireless access point.

1 19. The computer system as defined in claim 18 wherein the signaling unit further comprises a
2 light emitting diode (LED) coupled to the media access controller, and wherein the media access
3 controller lights the LED if a wireless access point is available.

1 20. The computer system as defined in claim 18 wherein the signaling unit further comprises a
2 display device capable of scrolling text messages, and wherein the media access controller places
3 text messages on the display device indicating the availability of a wireless access point.

1 21. The computer system as defined in claim 17 wherein the electrical switch further comprises
2 a momentary push button switch mounted on top of a video display of the notebook computer when
3 that video display is in the closed position.

1 22. The computer system as defined in claim 17 wherein the seek logic is configured to assert
2 the power supply output signal for a same amount of time that the electrical switch is activated, thus
3 requiring the user to hold electrical switch in the actuated position during a seek period of the media
4 access controller.

1 23. The computer system as defined in claim 22 wherein the seek logic further comprises:
2 a power supply enabled input signal, wherein the power supply enabled input signal is
3 asserted to indicate that the notebook computer is powered-on; and
4 wherein the seek logic is further configured to refrain from asserting its seek output signal if
5 the power supply enabled input signal is asserted.

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1 24. The computer system as defined in claim 17 wherein, responsive to a momentary actuation
2 of the electrical switch, the seek logic is configured to assert the power supply output signal for a
3 sufficient amount of time to allow the radio module to perform a wireless access seek function, and
4 wherein the seek logic further momentarily asserts its seek output signal responsive to the
5 momentary actuation of the electrical switch.

1 25. The computer system as defined in claim 24 wherein the seek logic further comprises:
2 a power supply enabled input signal, wherein the power supply enabled input signal is
3 asserted to indicate that the notebook computer is powered-on; and
4 wherein the seek logic is further configured to refrain from asserting its seek output signal if
5 the power supply enabled input signal is asserted.

1 26. A method of finding wireless access points with a computing device, the method
2 comprising:
3 requesting a wireless access seek with the computing device powered-off;
4 scanning for available wireless access points;
5 indicating the availability of wireless access points.

1 27. The method as defined in claim 26 wherein requesting a wireless access seek further
2 comprises actuating a momentary push-button.

1 28. The method as defined in claim 27 wherein actuating a momentary push-button further
2 comprises pushing a button mounted on an outer surface of the computing device.

1 29. The method as defined in claim 26 wherein requesting a wireless access seek further
2 comprises:

3 enabling substantially only a power supply that supplies power to a wireless communication
4 module; and

5 asserting a seek request signal to the wireless communication module.

1 30. The method as defined in claim 26 wherein scanning for available wireless access points
2 further comprises executing software in a microcontroller of a wireless communication module, and
3 wherein the software controls various radio components in the wireless communication module.

1 31. The method as defined in claim 26 wherein informing the user of the availability of wireless
2 seek access points further comprises lighting a light emitting diode.

1 32. A structure of a computer capable of seeking wireless access points for a network when the
2 computer is powered-off, the structure comprising:

3 a seek request button mounted on an outer surface of the computer;

4 a seek logic coupled to the seek request button;

5 a first power supply coupled to the seek logic, and wherein the seek logic enables
6 substantially only the first power supply responsive to assertion of the seek request button;

7 a wireless communication module coupled to the seek logic and the first power supply,
8 wherein the first power supply powers the wireless communication module, and wherein the seek

9 logic enables the wireless communication module to perform seeking for wireless access points
10 responsive to assertion of the seek request button; and
11 a notification device coupled to the wireless communication module, wherein the
12 notification device indicates the availability of a wireless access point.

1 33. The computer as defined in claim 32 wherein the notification device further comprises a
2 light emitting diode.

3 34. The computer as defined in claim 32 wherein the seek logic is further adapted to refrain
4 from enabling the wireless communication module to perform seeking for wireless access clients if
5 the computer is powered-on.

6 35. The computer system as defined in claim 32 wherein the first power supply powers
7 substantially only the wireless communication module.

8 36. A computer system with wireless networking capability, the computer system comprising:
9 a means for activating a seek for a wireless access point mounted on an outer surface of the
10 computer;
11 a control logic means coupled to the means for activating the seek for a wireless access
12 point;
13 a first power supply means coupled to the control logic means, and wherein the control
14 logic means enables substantially only the first power supply means responsive to assertion of the
15 seek request button;

9 a means for wireless network access coupled to the control logic means and the first power
10 supply means, wherein the first power supply means adapted for powering the means for wireless
11 network access, and wherein the control logic means enables the means for wireless network access
12 to perform seeking for wireless access points responsive to assertion means for activating a seek for
13 a wireless access point; and

14 a notification means coupled to the wireless communication module for notifying a
15 computer system user of the availability of a wireless access point.

37. The computer system as defined in claim 36 wherein the means for activating a seek request
for a wireless access client further comprises an electrical switch mounted on an outer surface of the
computer system.

38. The computer system as defined in claim 36 wherein the control logic means is further
adapted to refrain from enabling the means for wireless network access to perform seeking for
wireless access points if the computer system is turned on.

39. The computer system as defined in claim 36 wherein the notification means further
comprises a light emitting diode (LED), and wherein the means for wireless network
communication lights the LED to indicate the availability of a wireless access point.

40. A structure of a handheld device capable of seeking wireless access points for a network,
the structure comprising:

a seek request button mounted on an outer surface of the device;

4 a wireless communication module coupled to the seek request button, and wherein the
5 wireless communication module performs seeking for wireless access points responsive to assertion
6 of the seek request button;

7 a system battery coupled to the wireless communication module, and wherein the system
8 battery supplies power to the wireless communication module during seeks for wireless access
9 points; and

10 a notification device coupled to the wireless communication module, wherein the
11 notification device indicates the availability of a wireless access point.

41. The handheld device as defined in claim 40 wherein the notification device further
comprises a light emitting diode (LED).

42. The handheld device as defined in claim 41 wherein the notification device further
comprises a plurality of LEDs arranged in such a way as to indicate one of the availability and non-
availability of wireless access.

43. The handheld device as defined in claim 40 wherein the notification device further
comprises a display device for displaying text messages indicative of the availability of wireless
access.

44. The handheld device as defined in claim 40 wherein the wireless communication module
further comprises:

3 a microcontroller coupled to the seek request button and the system battery, and wherein the
4 microcontroller is programmed to perform wireless access seeks responsive to assertion of the seek
5 request button;
6 a plurality of radio circuits coupled to the microcontroller adapted to facilitate the
7 microcontroller's wireless access seeks.

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